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IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF ALASKA

In re Crash of Aircraft N93PC	)	No. 3:15-cv-0112-HRH
	)	[Consolidated with
on July 7, 2013, at Soldotna, Alaska	)	No. 3:15-cv-0113-HRH and
	)	No. 3:15-cv-0115-HRH]

O R D E R

Honeywell's Motion in Limine No. 4

Defendant Honeywell International moves to exclude certain opinions and testimony of plaintiffs' expert Mark Hood.<sup>1</sup> This motion is opposed.<sup>2</sup> Oral argument was requested but is not deemed necessary.

Background

On July 7, 2013, a deHavilland DHC-3 "Otter" airplane operated by Rediske Air, Inc. and piloted by Walter Rediske crashed shortly after take-off from the Soldotna Airport. Rediske and all of the passengers on board were killed in the crash. A Honeywell TPE 331-10R-511C turboprop engine had been installed in the accident aircraft. Plaintiffs, which are

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<sup>1</sup>Docket No. 394.

<sup>2</sup>Docket No. 474.

the estates of the passengers and Rediske, assert wrongful death, negligence, strict product liability, and breach of warranty claims against Honeywell.

Plaintiffs retained Mark Hood, a materials engineer, “to perform a materials engineering investigation regarding the . . . crash. . . .”<sup>3</sup> In his report, Hood offered four opinions:

1. The subject Honeywell TPE 331-10R engine’s compressor and turbine section components did not exhibit damage consist[ent] with an engine operating under takeoff power conditions at the time of impact.
2. The torsion shaft in the subject Honeywell TPE 331-10R engine failed in shear overload.
3. The destruction of the aft bushing of the subject torsion shaft installed in the subject Honeywell TPE 331-10R engine, along with significant rotational scoring and thermal discoloration at the aft bushing land, is consistent with in-flight shear failure of the torsion shaft.
4. The post-accident condition of the torsion shaft bushing contact areas inside the main shaft installed in the subject Honeywell TPE 331-10R engine is also consistent with in-flight shear failure of the torsion shaft.<sup>[4]</sup>

At his deposition, Hood testified that one of the “probabilities” in this case was that the

aft bushing . . . adher[ed] to the main shaft or the torsion shaft. If it [the aft bushing] were adhered both momentarily and then released, then . . . that would be a sudden transfer or . . . change

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<sup>3</sup>Materials Engineering Investigation Report at 1, Exhibit A, Honeywell’s Motion in Limine No. 4 [etc.], Docket No. 394.

<sup>4</sup>Id. at 7.

in the torque of a loading at the aft end of the . . . shaft. I can see that as one way to . . . shear the shaft.<sup>[5]</sup>

Hood also testified that he did not do any analysis to determine why the torsion shaft was bent, but that he thought it was bent during manufacture.<sup>6</sup>

Pursuant to Rule 702, Federal Rules of Civil Procedure, Honeywell now moves to exclude Hood's opinion and testimony "(1) that the airplane engine's torsion shaft was bent at manufacture[]; and (2) that the aft bushing of the torsion shaft momentarily bound to the main shaft and then released possibly causing enough force to shear the torsion shaft."<sup>7</sup>

### Discussion

Rule 702 of the Federal Rules of Evidence provides that expert opinion evidence is admissible if: (1) the witness is sufficiently qualified as an expert by knowledge, skill, experience, training, or education; (2) the scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (3) the testimony is based on sufficient facts or data; (4) the testimony is the product of reliable principles and methods; and (5) the expert has reliably applied the relevant principles and methods to the facts of the case.

City of Pomona v. SQM North America Corp., 750 F.3d 1036, 1043 (9th Cir. 2014). "Before admitting expert testimony into evidence, the district court must perform a 'gatekeeping role' of ensuring that the testimony is both 'relevant' and 'reliable' under Rule

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<sup>5</sup>Deposition of Mark B. Hood, P.E., at 24:24-25:8, Exhibit B, Honeywell's Motion in Limine No. 4 [etc.], Docket No. 394.

<sup>6</sup>Id. at 51:1-23.

<sup>7</sup>Honeywell's Motion in Limine No. 4 [etc.] at 2, Docket No. 394.

702.” United States v. Ruvalcaba-Garcia, 923 F.3d 1183, 1188 (9th Cir. 2019) (quoting Daubert, 509 U.S. at 597 (citation omitted)).

“Relevancy simply requires that ‘the evidence logically advance a material aspect of the party’s case.’” Ruvalcaba-Garcia, 923 F.3d at 1188-89 (quoting Estate of Barabin v. AstenJohnson, Inc., 740 F.3d 457, 463 (9th Cir. 2014)). “Expert testimony which does not relate to any issue in the case is not relevant and, ergo, non-helpful.” Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 591 (1993).

“‘[R]eliability’ . . . requires that the expert’s testimony have ‘a reliable basis in the knowledge and experience of the relevant discipline.’” Id. at 1188-89 (quoting Barabin, 704 F.3d at 463). “The district court must assess whether ‘the reasoning or methodology underlying the testimony is scientifically valid’ and ‘properly can be applied to the facts in issue[.]’” Id. at 1189 (quoting Daubert, 509 U.S. at 592–93). “‘The district court is not tasked with deciding whether the expert is right or wrong, just whether his testimony has substance such that it would be helpful to a jury.’” City of Pomona, 750 F.3d at 1044 (quoting Alaska Rent-A-Car, Inc. v. Avis Budget Group, Inc., 738 F.3d 960, 969-70 (9th Cir. 2013)). “The court must assess the expert’s reasoning or methodology, using as appropriate[,] criteria such as testability, publication in peer-reviewed literature, known or potential error rate, and general acceptance.” Id. “But these factors are meant to be helpful, not definitive, and the trial court has discretion to decide how to test an expert’s reliability as well as whether the testimony is reliable, based on the particular circumstances of the particular case.” Id. (citation omitted).

Honeywell first moves to exclude Hood's opinion and testimony about the cause of the bent torsion shaft. The parties have stipulated that Hood may not testify "about the possible cause of the bend in the torsion shaft and specifically that the torsion shaft was bent at manufacture and/or that it was installed in the engine in a bent condition."<sup>8</sup>

Honeywell next moves to exclude Hood's opinion and testimony about the possible momentary binding and release of the aft bushing (the "Momentary Binding theory"). Honeywell argues that Hood's opinion and testimony regarding the Momentary Binding theory are neither relevant nor reliable.

Honeywell argues that Hood's opinion and testimony regarding the Momentary Binding theory are not relevant because plaintiffs have not advanced such a theory in this case. Rather, Honeywell contends that plaintiffs' theory in this case is that "a bend in the torsion shaft caused the torsion shaft's aft bushing to bind to the main shaft, which caused an erroneously low torque reading, which led the pilot to over-torque the engine, which caused the torsion shaft to shear."<sup>9</sup> Honeywell argues that this "over-torquing theory" does not appear to involve the momentary binding and release of the bushing, thereby making Hood's opinion and testimony about such a binding and release irrelevant. Honeywell argues that allowing Hood's opinion and testimony about the possible momentary binding of the bushing will only confuse the jury. Honeywell also suggests that plaintiffs are

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<sup>8</sup>Stipulation Regarding Certain Motions in Limine at 1, Docket No. 468.

<sup>9</sup>Honeywell's Motion in Limine No. 4 [etc.] at 8, Docket No. 394.

intending to offer the Momentary Binding theory as an independent, standalone theory as to what caused the torsion shaft to shear, which Honeywell contends would make it an untimely disclosed expert opinion.

Hood's Momentary Binding theory opinion is not an untimely disclosed expert opinion as Hood disclosed this theory at his deposition. This opinion and related testimony are also not irrelevant, given that plaintiffs may be able to rely on the consumer expectation test in this case, which applies in a design defect case. In a design defect case, "the factfinder can find a product defective . . . if the plaintiff demonstrates that the product failed to perform as safely as an ordinary consumer would expect when used in an intended or reasonably foreseeable manner. . . ." General Motors Corp. v. Farnsworth, 965 P.2d 1209, 1220 (Alaska 1998) (citation omitted). Hood's Momentary Binding theory is relevant to plaintiffs' contention that the shaft sheared in flight, which a torsion shaft is not supposed to do.

As for whether Hood's opinion and testimony regarding the Momentary Binding theory are reliable, plaintiffs argue that Hood's opinion and testimony regarding the Momentary Binding theory are reliable. Plaintiffs contend that Hood's primary opinion is that the torsion shaft in the accident aircraft failed in flight and that this opinion is based on the physical evidence that the engine was not running when it hit the ground. At his deposition, when asked if he had any theories as to how the torsion shaft could have sheared in flight, Hood offered the Momentary Binding theory. Hood testified that this theory was

based on “one of the Honeywell analyses of . . . one of the other accidents[.]”<sup>10</sup> The “other accident” Hood was referring to was the Owasso Incident, which involved a 2013 crash of a MU-2B-25, which had two Honeywell TPE 331-10AV-511M engines installed. In an analysis of those engines done by Honeywell, it was stated that the “aft bushing . . . operates at a higher temperature than the forward bushing” and that “[t]his higher temperature can result in the aft bushing adhering to either shaft due to oil coking.”<sup>11</sup> The report goes on to say that “significant bushing damage can occur for cases where the bushing adherence is high and the shaft relative motion persists for . . . several seconds.”<sup>12</sup> Given that Hood’s Momentary Binding theory is based on Honeywell’s own admission that aft bushings can adhere to the shafts, plaintiffs argue that Hood’s opinion and testimony on this issue are plainly reliable. As for any complaint that Hood did not do any testing to verify his Momentary Binding theory, plaintiffs contend that Hood “testified that testing would be impractical as there are so many variables such as how much adherence of the bushing there was, how the adherence breaks free, whether it occurs just once or [whether] there [are]

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<sup>10</sup>Hood Deposition at 24:25-25:3, Exhibit B, Plaintiffs Response in Opposition to Honeywell’s Motion in Limine No. 4 [etc.], Docket No. 474.

<sup>11</sup>Honeywell Analysis at 8, Exhibit C, Plaintiffs Response in Opposition to Honeywell’s Motion in Limine No. 4 [etc.], Docket No. 474.

<sup>12</sup>Id.

repetitive bindings and release.”<sup>13</sup> Plaintiffs argue that any questions about testing go to the weight that should be given Hood’s opinion, not the admissibility.

Hood’s opinion and testimony about the Momentary Binding theory are unreliable. Hood did nothing to test this theory. Rather, it is based on Honeywell’s analysis of the engines in the Owasso Incident, which as discussed in the court’s order on Honeywell’s motions in limine Nos. 1 and 2, involved a different aircraft with different Honeywell engines that had different torsion shafts. While an expert can certainly rely on other accidents as a basis for an opinion, a couple of statements in Honeywell’s analysis of the Owasso Incident engines are not sufficient support for Hood’s opinion that a torsion shaft could shear in flight because of momentary binding.

### Conclusion

Honeywell’s motion in limine No. 4 is granted. Hood is precluded from offering his opinion and testimony about the Momentary Binding theory.

DATED at Anchorage, Alaska, this 22nd day of June 2021.

/s/ H. Russel Holland  
United States District Judge

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<sup>13</sup>Plaintiffs Response in Opposition to Honeywell’s Motion in Limine No. 4 [etc.] at 3, Docket No. 474.